

REMARKS

Claims 45-88 are currently pending in the subject application and are presently under consideration. Claims 1-44 have been canceled herein. A version of all claims can be found at pages 2-8 of this Reply. Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

The disclosed subject matter relates generally to industrial control systems, and more particularly to an architecture that can facilitate web-based implementation of HMIs (*see e.g.*, pg. 8, ll. 23-26) in an industrial automation environment (*see e.g.*, pg. 10, ll. 27-28). Moreover, the HMI can be rendered at a central location (e.g., at a server or web server) and delivered to and displayed by browsers operating on client devices (*see e.g.*, pg. 9, ll. 30-31) over a browser session connection previously established. Thus, the client devices can be zero-install clients that run a standard web browser, but without the necessity for any additional application-specific software or higher end hardware as well as a potential reduction in installation or upgrade costs (*see e.g.*, pg. 3, line 22 – pg. 4, line 2).

In particular, independent claim 45 recites, “means for interfacing a server component *by way of a network to a set of substantially **zero-install client devices** associated with an industrial automation environment.*” For example, client devices can display the browser-based HMI via a standard web browser and without requiring any other application-specific software to manage, format, configure, or determine aspects of the browser-based HMI. Independent claim 45 also recites, “means for establishing at least one **browser session** over the network with at least one browser running on one or more device included in the set of client devices.” For instance, the browser session can be asynchronous and/or continuous, and thus can push or pull data and further, need not be broken and re-established following a response. Independent claim 45 further recites, “means for **transmitting the browser-based HMI over the network by way of the browser session** to the at least one browser.” For example, processing and other determinations regarding the browser-based HMI can be performed at a central server and propagated to zero-install clients, thus reducing costs for installation, maintenance, and/or updating. The art of record fails to disclose or suggest such features.

Rather, Green discloses an event monitor that facilitates monitoring and reporting data events occurring through an enterprise (Abstract). Green discloses two types of brokers: an enterprise broker (*e.g.*, element102) that is maintained on a central server, and a client broker

(e.g., element103) *that is maintained by client devices*. In particular, while client brokers can employ web-based applications such as standard browsers, they are not themselves web-based, but rather, proprietary applications that can be adapted to manipulate browsers or other disclosed features. Specifically, each client broker is embodied as user-configurable, application-specific software ([0035], [0039]) and is coupled to an enterprise broker ([0031]) in order to effectuate the event monitoring.

On the other hand, Kreidler relates to management of machine tool data obtained from various client automation systems (Abstract). As with Green, Kreidler also contemplates leveraging web browsers to effectuate communications between a client and a host (col. 5, ll. 24-34), while employing proprietary client-side software in the form of a machine handler (col. 5, ll. 41-45; FIG. 4, element 56), wherein the machine handler interprets data received from the host and/or loads received data to customer machine tools in a suitable manner (col. 5, ll. 56-63).

Appreciably, both Green and Kreidler require special-purpose and/or application-specific software to be run on the client along with the browser in order to operate. In contrast to these cited references, applicant discloses that the claimed browser-based HMI can solve problems associated with traditional HMIs (like those detailed in Green and Kreidler) by requiring no application-specific software (such as the client broker of Green or the machine handler of Kreidler), and thus installation, configuration, and updates need only be performed on a set of servers rather than on a typically much larger set of clients, and, further, the clients need only run a browser instead of additional software such as the client broker or the machine handler, all of which can facilitate increased efficiency and lower costs and resource utilization (*see e.g.*, Applicants disclosure: pg. 3. Line 17 – pg. 4, line 2).

On the other hand, the cited art expressly relies upon brokers/handlers to communicate between clients and server. These brokers/handlers would all need to be memory resident and individually updated upon changes to the enterprise broker or servers, which effectively illustrates that neither Green nor Kreidler contemplate, much less disclose or suggest, a communication component ... that *initiates via the network a browser session with at least one browser operating on a device included in the set of client devices.*” Rather, in the art of record any use of a browser on a client device relating to an HMI is specifically tied to local application-specific software. Hence, no *browser session* in the manner claimed is contemplated by Green or Kreidler.

Furthermore, it is readily apparent for at least the reasons noted previously, that Green and Kreidler are materially deficient to disclose or suggest, “***transmitting the browser-based HMI over the network by way of the browser session to the at least one browser,***” as the art of record requires software and hardware on the respective clients to control what is displayed on the local browsers. Moreover, given that both Green and Kreidler both require application-specific software to operate on the clients (*e.g.*, the client broker or machine handler), it is readily apparent that such art does not disclose and in fact expressly teaches away from “interfacing by way of a network ***to a set of substantially zero-install client devices*** associated with an industrial automation environment.”

For at least the foregoing reasons, claims 45-88 are believed to be allowable over the art of record.

CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [ALBRP316US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

Respectfully submitted,
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